

## ECE 403 Requirements Capture - Wind Turbine

### Intro

The idea of this project is to create a cheaper alternative to current large wind turbines. The plan is that with smaller moving parts we should be able to create a turbine that will be smaller yet have an equal if not higher power output while saving greatly on initial startup costs.

### Requirements

- Have an equal or higher power output compared to larger turbines.
- Have a much lower startup cost.
- Be able to operate at lower wind speeds than conventional turbines.
- Be able to operate at higher wind speeds without breaking.
- Have outside cone diameter of 1.6 meters.
- Use a smaller turbine on the inside; size determined to maximize efficiency and cost savings.
- Required that the cone can withstand high wind speeds without damage according to standards.
- Increase maximum output of the current generator via altering the controller

### Timeline

- Within 2 months have a material list and proof of concept.
- By graduation, working prototype.

### Model



<http://www.landartgenerator.org/readwind3.html>



<http://www.designboom.com/weblog/cat/16/view/23383/bird-friendly-compressed-air-wind-turbines-by-raymond-green.html>

### Summary

Within one year produce a prototype to test the theory presented. The part of this project we are to work on is to design a “receiver” or funnel that will focus the wind into a smaller turbine and produce as much power as the more expensive counterpart.